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EXAMINER

KUBIEK, ANNE R

ARTICLE PAPER NUMBER

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Please find below and/or attached an Office communication concerning this application or proceeding.

Application No.

Applicant(s)

09/744 614

CARMAN, JOHN G

Office Action Summary

Examiner

Art Unit

Anne R. Kubelik

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 21 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1, 2, 5, 8, 9, 12 and 15-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-2, 5, 8-9, 12 and 15-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 21 November 2002 is/are a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of.
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other _____

DETAILED ACTION

1 The abstract has been amended, claims 1-2 and 5 have been amended, claims 3-4, 6-7, 10-11 and 13-14 have been cancelled and claims 15-18 have been added, as requested in Paper No. 12, filed 21 November 2002. Claims 1-2, 5, 8-9, 12 and 15-18 are pending.

2 The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Objections

3 Claim 15 is objected to because "method" should be replaced with "--method--".

Claim Rejections - 35 USC § 112

4 Claims 1-2, 5, 8-9, 12 and 15-18 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The rejection is repeated for the reasons of record as set forth in the Office action mailed 15 May, 2002, as applied to claims 1-2, 5, 8-9 and 12. Applicant's arguments filed 21 November 2002 have been fully considered but they are not persuasive.

The claims are drawn to a method for genetically stabilizing an apomictic plant, that is producing a plant where the average frequency of sexual seed formation of its progeny does exceed that of the plant itself, by producing a polyploid wherein the duplicate genes responsible for apomixis are isolated from each other on opposite homologous chromosomes such that recombination is suppressed among homeologous genomes within the polyploid line.

The instant specification only provides guidance for identification of *Antennaria*, *Tripsacum* and *Sorghum* as plants that meet the criteria of the specification (example 1), and the crossing of diploid *T. laxum* to *T. pilosum* to produce a progeny plant, which is crossed to *T. zopilotense* or *T. bravum* (example 2). The specification also provides general guidance for QTL mapping of apomixis in hybrids (example 3).

The specification fails to provide guidance for methods of determining if duplicate genes responsible for apomixis are isolated from each other or are on opposite homologous chromosomes, or for suppression of recombination among homeologous genomes. The duplicate genes responsible for apomixis are not taught, and thus their positions in the genome cannot be determined. No methods for determining their positions are presented. No guidance is provided for selecting "genetically divergent sexual or apomictic lines" for hybridizing with apomictic or genetically stabilized plants. No guidance is provided for the genetic material that results in female meiosis abortion or facultative apomixis.

Given the claim breadth and lack of guidance as discussed above and the unpredictability discussed in the prior Office action, undue experimentation would have been required by one skilled in the art to develop and evaluate methods for genetically stabilizing an apomictic plant.

Applicant urges that the invention relates to methods for stabilizing and controlling apomixis and that because the methods are pioneering, they are broadly claimed. Applicant urges that claims of broad, narrow and intermediate scope are present (response pg 19-22).

This is not found persuasive because claims of all scope must be enabled. A broadly claimed invention requires it be broadly enabled.

Applicant urges that the specification, on pg 12, lines 10-13, pg 1, lines 5-11 and pg 8, lines 3-7 teach that stabilizing apomixis means assuring that the average frequency of sexual seed formation among sexually derived progeny of an apomictic mother plant does not exceed that of such apomictic mother plant. Applicant urges that plant breeding is a well-known technology. Applicant urges that copending application 09/576,623 and the instant application teach how to select sexual parent plants and hybridize them to produce apomictic progeny. Applicant thus urges that the nature of the invention makes the specification enabling (response pg 23-24).

This is not found persuasive because none of the specification, the copending application 09/576,623 or the prior art teach the duplicate genes responsible for apomixis or the genetic material that results in female meiosis abortion or facultative apomixis.

Applicant urges that convention wisdom has held that apomixis is controlled by a single gene, and that copending application 09/576,623 and the instant application challenge that wisdom. Applicant urges that the present invention is based on the asynchronous expression of many duplicate genes required for female or seed development, and that plant breeding is known in the art. Applicant thus urges that the state of the prior art weighs in favor of the present application containing an enabling disclosure (response pg 24-25).

This is not found persuasive because neither the specification nor the prior art teach the duplicate genes responsible for apomixis or the genetic material that results in female meiosis abortion or facultative apomixis.

Applicant urges that the level of skill of one in the art is high, and one of skill in the art would know how to select plants for plant breeding, how to hybridize and grow plants, how to

recognize apomixis, how to determine if apomixis is unstable, and how to make polyploid derivative lines (response pg 25-26).

This is not found persuasive. This is agreed in general, but the prior art does not teach how to determine if a plant is generically divergent enough to genetically enhance an apomictic plant, nor does it teach how to breed an apomictic plant to include genetic material that results in female meiosis abortion or facultative apomixis because those genes are not taught in the art, nor are they taught in the instant specification.

Applicant urges that Ellerstrom failed to disclose anything about the average frequency of apomixis from generation to generation and failed to observe genetic stability or instability, thus failing to report stabilizing genetic stability. Applicant urges that the objective of Hovin et al was to determine the quality of seed produced by 41 different lines of naturally apomictic Kentucky bluegrass, and that the conclusions are relevant to the processes of producing apomictic plants. Applicant urges that Purnhauser teaches that techniques are well known for crossing non-synchronously flowering plants. Applicant urges that in DeWet et al the occasional genetic instability was caused by sexual meiosis, not apomeiotic processes. Applicant agrees that in the absence of reliable histological, chromosome counting, karyotyping, and progeny test marker techniques, the screening of apomictic plants for percentage apomictic progeny is unpredictable, but urges that such techniques are well known in the art. Applicant urges that Hovin et al teaches histological techniques to observe the development of sexual and asexual embryo sacs, the conclusion that the analysis are only reliable when pistils examined at certain stages is exactly what the specification teaches in the Declaration of John Carman and that this is well-known. Applicant states that the references cited in the Office action discuss ways to

determine if progeny are produced apomictically or sexually, but urges that such determinations are secondary to practicing the instant methods, what is claimed is method for stabilizing apomixis by producing polyploids. Applicant urges that those who reject the idea of multiple genes being involved in the apomixis have claimed a partial or step-wise accumulation of essential alleles at multiple loci would tend to be deleterious to plant fertility, thus they argue that apomixis could not have evolved by evolutionary steps. Applicant urges that the inventor has discovered that many genes are required for the expression of apomixis, and that the production of apomictic plants can be predictable because apomixis evolved in nature through hybridization of highly fertile sexual plants that differ from each other in the timing of megasporogenesis et al. Applicant urges that once one sees how the duplicate gene asynchrony theory explains how apomixis arises, it is straightforward to use plant breeding to stabilize apomixis. In the response Applicant cites Torabinejad et al, LaBlanc et al, Asker et al, and Liu et al (response pg 26-37).

This is not found persuasive. The specification does not teach the many genes that are required for the expression of apomixis. Methods to determine if plants are produced sexually or apomictically are crucial to method steps for determining if a plant has genetic instability or stability. Ellerstrom (1977) and Hovin et al teach the effects the environment has on apomixis; thus, determining if plants are genetically stabilized for apomixis would be unpredictable. The limitations of Hovin et al are not taught by the instant specification. See *Genentech, Inc. v. Novo Nordisk, A/S*, 42 USPQ2d 1001, 1005 (Fed. Cir. 1997), which teaches that disclosure of a "mere germ of an idea does not constitute [an] enabling disclosure", and that "the specification, not the knowledge of one skilled in the art" must supply the enabling aspects of the invention.

Torabinejad et al, LaBlanc et al, Asker et al, and Liu et al could not be considered because they were not sent. The Declaration of John Carman could not be considered because it was not sent.

Applicant urges that the specification provides a through explanation of how to make apomictic plants using duplicate gene asynchrony, and that any experimentation required would be routine (response pg 39-40). This is not found persuasive. Applicant's arguments are assertions only, and are not convincing for the reasons above.

5. Claims 1-2, 5, 8-9, 12 and 15-18 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are broadly drawn to a genetically stabilized apomictic plants and to methods of making them by producing polyploid derivative lines that have the duplicate genes responsible for apomixis isolated from each other on opposite chromosomes.

The specification does not describe the structural features of these duplicate genes or the genetic material that results in female meiosis abortion or facultative apomixis. The structural features that distinguish such genes or genetic materials from other genes or genetic material are not described.

Because the genes are not described, the method of making genetically stabilized apomictic plants and the plants containing them are likewise not described, and the specification fails to provide an adequate written description of the claimed invention.

Therefore, given the lack of written description in the specification with regard to the structural and physical characteristics of the compositions used in the claimed methods, it is not clear that Applicant was in possession of the genus claimed at the time this application was filed

See *Univ. of California v. Eli Lilly*, 119 F.3d 1559, 43 USPQ 2d 1398 (Fed. Cir. 1997)

The name cDNA is not in itself a written description of that DNA; it conveys no distinguishing information concerning its identity. While the example provides a process for obtaining human insulin-encoding cDNA, there is no further information in the patent pertaining to that cDNA's relevant structural or physical characteristics; in other words, it thus does not describe human insulin cDNA. Accordingly, the specification does not provide a written description of the invention

and at pg 1406

a generic statement such as "vertebrate insulin cDNA" or "mammalian insulin cDNA," without more, is not an adequate written description of the genus because it does not distinguish the genus from others, except by function. It does not specifically define any of the genes that fall within its definition. It does not define any structural features commonly possessed by members of the genus that distinguish them from others. One skilled in the art therefore cannot, as one can do with a fully described genus, visualize or recognize the identity of the members of the genus. A definition by function, as we have previously indicated, does not suffice to define the genus because it is only an indication of what the genes does, not what it is.

See *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ 2d 1016 at page 1021

A gene is a chemical compound, albeit a complex one, and a conception of a chemical compound requires that the inventor be able to define it so as to distinguish it from other materials. Conception does not occur unless one has a mental picture of the structure of the chemical or is able to define it by its method of preparation, its physical or chemical properties, or whatever characteristics sufficiently distinguish it. It is not sufficient to define it solely by its principal biological property, e.g., encoding human erythropoietin, because an alleged conception having no more specificity than that is simply a wish to know the identity of any material with that biological property.

6 Claims 1-2, 5, 8-9, 12 and 15-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention. Dependent claims are included in all rejections. The rejection is repeated for the reasons of record as set forth in the Office action mailed 15 May, 2002, as applied to claims 1-2, 5, 8-9 and 12. Applicant's arguments filed 21 November 2002 have been fully considered but they are not persuasive.

Claims 1 and 15-16 are indefinite in their recitation of duplicate genes "isolated from each other on opposite homeologous genomes". It is unclear whether the phrase refers to genomes of different plants and is isolation refers to physical location or some form of genetic isolation. Applicant urges that after reading the specification, one would know how genetic instability is observed and that in allopolyploidy recombination occurs with genomes, not between genomes; thus, the genes responsible for apomixis are maintained in a homozygous condition within genomes but a heterozygous condition between genomes. Applicant urges that one of skill in the art would understand this upon reading the specification (response pg 15-16). This is not persuasive because it appears from the claims that the duplicate genes must be on two different genomes, while it appears from the arguments it appears that they must be one only one genome.

The following rejections are new:

Claims 1, 2, part (a) 5, part (a), 15-16, and 17, part (a) are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are those involved in producing a polyploid derivative line. What does one have to do to produce such lines? The claims are also missing the steps that distinguish the claimed method from a method of producing a polyploid derivative line that does not stabilize an apomictic plant.

Claim 2 lacks antecedent basis for the limitation "said apomictic polyploid derivative line exhibiting segmental allopolyploidy" in lines 6-7.

It is unclear in claim 2, part (b) how one can self with a similar plant as selfing involves crossing with the plant itself. Additionally is selfing or crossing with a similar plant all that is

required to obtain sexually-derived progeny that express unreduced egg fertility or parthenogenesis in this claim and claim 18, part (b)?

Claims 5 and claim 18, parts (a) and (c) are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are those involved in producing an apomictic plant and genetically stabilizing it. What does one have to do to produce such plants?

The term "genetically divergent" in claim 5, part (b) and claim 18, part (d), is a relative term that renders the claim indefinite. The term "genetically divergent" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. How different genetically is a plant that is genetically divergent versus one that is not?

Claim 5, part (b) and claim 18, part (d), lack the criteria for determining if an apomictic plant is genetically enhanced, or is the only thing that is necessary is that the plant be crossed with any "genetically divergent" plant?

It is unclear in claim 5, part (c) and claim 18, part (e) what the plant is crossed to, or for how many generations, or what any of the other steps are in "breeding" the plant. It is also unclear if the product of claim 5, part (b) is used in this step.

Claims 15-16 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are those involved in producing a segmental allopolyploid derivative line such that duplicate genes responsible for apomixis are isolated from recombination by segmental allopolyploidy. What does one have to do to produce such plants?

Claim 17, part (a) is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are those involved in producing a derivative line such that female meiosis usually aborts. What does one have to do to produce such plants?

Claim 17, part (b) lacks antecedent basis for the limitation "said plant".

It is unclear in claim 17, part (b) which plant the plant is crossed to, or for how many generations, or what any of the other steps are in "breeding" the plant.

Claim 18, part (c) lacks antecedent basis for the limitation "said ... near obligate derivative line".

Claim Rejections - 35 USC § 102

7. Claims 1-2, 5, 8-9, 12 and 15-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Hanna (US Patent 5,811,636). The rejection is repeated for the reasons of record as set forth in the Office action mailed 15 May, 2002, as applied to claims 1-2, 5, 8-9 and 12. Applicant's arguments filed 21 November 2002 have been fully considered but they are not persuasive.

Applicant urges that Hanna et al teaches that introgress of apomixis genes into pearl millet requires some normal male meiosis, which can be produced by crossing tetraploid species with wild apomictic species. Applicant urges that Hanna et al fails to disclose methods for stabilizing genetic stability as the term is used in the specification (response pg 40-43).

This is not found persuasive because Table 1 shows the production of progeny that are only apomictic. Thus apomixis is stabilized. See also Table 2, in which the proportion of sexual versus asexual embryo sacs is analyzed. Note that the instant claims do not recite any steps for

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determining if a apomictic plant is genetically stabilized, but merely states that if the polyploid line is produced, the plant will be genetically stabilized.

Additionally, the recitation "genetic stabilizing an apomictic plant exhibiting genetic instability" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

8. Claims 1-2, 8-9 and 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Ellerstrom (1977, Hereditas 87:107-180). The rejection is repeated for the reasons of record as set forth in the Office action mailed 15 May, 2002, as applied to claims 1-2 and 8-9. Applicant's arguments filed 21 November 2002 have been fully considered but they are not persuasive.

Applicant urges that Ellerstrom treats the subject of improving seed set through selection over 6 generations but fails to disclose anything about average frequency of apomixis from generation to generation (response pg 43-44).

This is not found persuasive because the instant claims do not recite any steps for determining the average frequency of apomixis from generation to generation. Additionally, the recitation "genetic stabilizing an apomictic plant exhibiting genetic instability" has not been given patentable weight, as discussed above.

9. Claims 1, 8 and 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Saran et al (1976, J. Cytol. Genet. 11:22-28). The rejection is repeated for the reasons of record as set

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forth in the Office action mailed 15 May, 2002, as applied to claims 5 and 12. Applicant's arguments filed 21 November 2002 have been fully considered but they are not persuasive.

Applicant urges that Saran describes the effects of different photoperiods on facultativeness of a facultatively apomictic tetraploid. Applicant urges that Saran fails to disclose producing an apomictic plant and stabilizing the plant (response pg 44-45).

This is not found persuasive because Saran et al teach crossing of two biotypes of *D. intermedium* to produce a tetraploid plant, X570 (pg 22, line 24, to pg 23, line 26), and that this plant had genetically stabilized apomixis (Table 1, Figure 1, pg 23-27).

Claim Rejections - 35 USC § 102 - 35 USC § 103

10. Claims 8-9 and 12 remain rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kindiger (US Patent 5,710,367). The rejection is repeated for the reasons of record as set forth in the Office action mailed 15 May, 2002. Applicant's arguments filed 21 November 2002 have been fully considered but they are not persuasive.

Applicant urges that Kindiger fails to disclose instability of apomixis as the terms stability and instability are used in the instant application and fails to disclose any method for stabilizing of apomixis (response pg 45-49).

This is not found persuasive. Polyploid plants were produced that reproduce by apomixis (see column 15, lines 22-45). As stated above, the genes involved in apomixis have not been adequately described. Furthermore, a prior art plant having the same characteristics as the

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claimed plant would anticipate the claimed plant even if made by a different method (i.e., using a different parent plant).

Additionally, a rejection under 35 U.S.C. 102 or 103 does not require the same analysis as a rejection under only 35 U.S.C. 102 or 35 U.S.C. 103. The rejection is made because the Examiner cannot determine whether the prior art possesses the unrecited characteristics. The Examiner does not have sufficient facts to determine whether claimed apomictic plants are inherently the same. In addition, the Examiner cannot conclude that the claimed subject matter would have been obvious since it cannot be determined whether the apomictic plants differ. Where the prior art product seems to be identical, except that the prior art is silent to a characteristic or property claimed, then the burden shifts to Applicant to provide evidence that the prior art would neither anticipate nor render obvious the claimed invention. See *In re Best* 195 USPQ 430, 433 (CCPA 1977).

Claim Rejections - 35 USC § 103

11. Claims 1-2, 5, 8-9, 12 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellerstrom (1977, Hereditas 87:107-180) in view of Ellerstrom (1983, Hereditas 99:315). The rejection is repeated for the reasons of record as set forth in the Office action mailed 15 May, 2002, as applied to claims 1-2, 5, 8-9 and 12. Applicant's arguments filed 21 November 2002 have been fully considered but they are not persuasive.

Applicant urges that Ellerstrom (1977) and Ellerstrom (1983) were discussed previously and that neither reference alone or in combination discloses or suggests a method of stabilizing genetic instability of apomixis (response pg 49).

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This is not found persuasive. No arguments with respect to Ellerstrom (1983) were presented in the prior art portion of the response. Applicant has presented no arguments as to why the combination of references does not anticipate the claims.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

12. Claims 1-2, 5, 8-9, 12 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saran (1976, J. Cytol. Genet. 11:22-28) in view of Bashaw et al (1987, Principles of Cult. Devel., Vol 2, pg 40-82). The rejection is repeated for the reasons of record as set forth in the Office action mailed 15 May, 2002, as applied to claims 5 and 12. Applicant's arguments filed 21 November 2002 have been fully considered but they are not persuasive.

Applicant urges that Saran fails to disclose or suggest genetic instability of the apomixis trait from generation to generation. Applicant urges that Bashaw teaches that apomixis is produced by a single gene and fails to disclose or suggest genetic instability of the apomixis trait from generation to generation. Applicant thus urges that the references in combination fail to teach or suggest a method of stabilizing genetic instability of apomixis (response pg 50-51).

This is not found persuasive because Saran et al teach crossing of two biotypes of *D. intermedium* to produce a tetraploid plant, X570 (pg 22, line 24, to pg 23, line 26), and that this plant had genetically stabilized apomixis (Table 1, Figure 1, pg 23-27). Bashaw et al teach the need for additional breeding steps (pg 49).

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In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

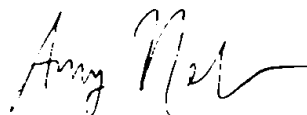
13 No claim is allowed.

14 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne R. Kubelik, whose telephone number is (703) 308-5059. The examiner can normally be reached Monday through Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson, can be reached at (703) 306-3218. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9307 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Customer Service at (703) 308-0198.

Anne R. Kubelik, Ph.D.
January 23, 2003



AMY J. NELSON, PH.D.
SUPERVISORY PATENT EXAMINER
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